

REMARKS

Claims 1-3, 5, 7 and 10-13 were rejected under 35 U.S.C. 103(a) on the grounds of obviousness from Leshem in view of Espy, and further in view of Horst et al., Hillis, Dekoning, et al., and Swanson et al. The Examiner indicated that Leshem teaches a controller providing a communication path between a first server and some storage devices through an associate storage device bypass circuit board, and that Horst et al. teaches a first controller providing a communication path between a first server and each storage device, and a second controller providing a communication path between the second server and each storage device, allowing the CPUs of the two systems to operate in a simplex mode in independent fashion. The Examiner further asserted that Horst et al. teaches at least one of the servers being operative to establish direct communication between the first and second controllers, and the first and second controllers being operative to maintain direct communication between the first and second controller independent of the at least one CPU of the first server and the at least one CPU of the second server, referring to Fig. 1B, Router 14A to Router 14A' and column 13, lines 21-24 of Horst et al., because that allows redundant communication paths between the servers. The Examiner further indicated that it would have been obvious to modify the system of Leshem with the system of Horst et al.

The portion of the specification of Horst et al. at column 13, lines 21-24, referred to by the Examiner states "The topology thereby obtained establishes redundant communication paths between any CPU 12 (12A, 12B, 12A', 12B') and any I/O packet

interface 16 of the processing system 10 shown in FIG. 1B." It is therefore clear that the communication between a first controller and a second controller in Horst et al. suggested by the Examiner is not independent of the CPUs of the first server and the second server. Claim 1 recites "at least one of said servers being operative to establish direct communication between the first and second controllers, and said first and second controllers being operative to maintain direct communication between the first and second controllers independent of said at least one CPU of said first server and said at least one CPU of said second server." In the duplex mode, incoming I/O is supplied to both CPUs, and it is clear that in Horst et al., even in the simplex mode, such communication is not independent of involvement of at least one CPU in the communication. As mentioned at column 13, lines 34-36 of Horst et al., the topology of FIG. 1B "establishes redundant communication paths between any pair of CPUs 12 of system 10, providing a means for fault tolerant inter-CPU communication." It is respectfully submitted that none of the references cited teach, disclose or suggest, either individually or in combination, first and second servers each with at least one CPU, and at least one of the first and second servers being operative to establish direct communication between their respective first and second controllers, and said first and second controllers being operative to maintain direct communication between the first and second controllers independent of the at least one CPU of the first server and the at least one CPU of said second server, as is claimed. It is therefore respectfully submitted that Claims 1-3, 5, 7 and 10-13 are novel and inventive over Leshem, Espy, Horst et al., Hillis, Dekoning, et al., and Swanson et al., either individually or in combination, and

that the rejection of Claims 1-3, 5, 7 and 10-13 on the grounds of obviousness from Leshem in view of Espy, and further in view of Horst et al., Hillis, Dekoning, et al., and Swanson et al. should be withdrawn.

Claims 6, 16, 19-21, 23, 24, 28-31 and 34 were rejected under 35 U.S.C. 103(a) on the grounds of obviousness from Leshem in view of Espy, and further in view of Horst et al., Hillis, Dekoning, et al., Swanson et al. and Harvey.

As to Claim 6, Harvey was cited as disclosing a module including a storage device bypass board connector for each of the storage device bypass circuit boards with an opening between each connector to permit air flow between the connectors for cooling purposes to prevent overheating of the drive and related hardware. As to Claim 16, Harvey was also cited as disclosing a module including a disk drive bypass circuit board connector for each of the disk drive bypass circuit boards, with an opening between each connector to permit flow of air between the connectors and alongside the bypass circuit boards and disk drives for cooling purposes. Claims 6 and 16 depend from Claim 1. It is respectfully submitted that Harvey does not teach, disclose or suggest first and second servers each with at least one CPU, and at least one of the first and second servers being operative to establish direct communication between their respective first and second controllers, and said first and second controllers being operative to maintain direct communication between the first and second controllers independent of the at least one CPU of the first server and the at least one CPU of said second server, as is claimed. In light of the foregoing remarks, it is respectfully submitted that Claims 6 and 16 are novel

and inventive over Leshem, Horst et al., Hillis, Dekoning, et al., Swanson et al. and Harvey, either individually or in combination.

As to Claim 19, the Examiner indicated that Horst et al. teaches at least one of the servers being operative to establish direct communication between the first and second controllers, and the first and second controllers being operative to maintain direct communication between the first and second controller independent of the at least one CPU of the first server and the at least one CPU of the second server, referring to Fig. 1B, Router 14A to Router 14A' and column 13, lines 21-24 of Horst et al., as discussed above.

Claim 19 recites "at least one of said first and second servers being operative to establish direct communication between the first and second controllers, and said first and second controllers being operative to maintain direct communication between the first and second controllers independent of said at least one CPU of said first server and said at least one CPU of said second server." It is respectfully submitted that none of the references cited teach, disclose or suggest, either individually or in combination, first and second servers each with at least one CPU, and at least one of the first and second servers being operative to establish direct communication between their respective first and second controllers, and said first and second controllers being operative to maintain direct communication between the first and second controllers independent of the at least one CPU of the first server and the at least one CPU of said second server, as is claimed. It is therefore further respectfully submitted that Claims 19-21, 23, 24, 28-31 and 34 are novel and inventive over the references cited, either taken individually or in combination, and

that the rejection of Claims 6, 16, 19-21, 23, 24, 28-31 and 34 on the grounds of obviousness from Leshem in view of Espy, and further in view of Horst et al., Hillis, Dekoning, et al., Swanson et al. and Harvey should be withdrawn.


Claims 8, 9, 17, 18, 25-27, 35 and 36 were rejected under 35 U.S.C. 103(a) on the grounds of obviousness from Leshem in view of Espy, and further in view of Horst et al., Hillis, Dekoning, et al., Swanson et al., Harvey and Kimura et al. Claims 8, 9, 17 and 18 depend from Claim 1, discussed above, and Claims 25-27, 35 and 36 depend from Claim 19, discussed above. Kimura et al. was cited as teaching that each drive bypass circuit board is relatively flat. It is respectfully submitted that Kimura et al. also does not teach, disclose or suggest first and second servers each with at least one CPU, and at least one of the first and second servers being operative to establish direct communication between their respective first and second controllers, and said first and second controllers being operative to maintain direct communication between the first and second controllers independent of the at least one CPU of the first server and the at least one CPU of said second server, as is claimed. It is therefore respectfully submitted that Claims 8, 9, 17, 18, 25-27, 35 and 36 are novel and inventive over Leshem, Espy, Keaveny et al., Swanson et al., Dekoning, et al., Harvey and Kimura et al., either individually or in combination, and that the rejection of Claims 8, 9, 17, 18, 25-27, 35 and 36 on the grounds of obviousness from Leshem in view of Espy, and further in view of Horst et al., Swanson et al., Dekoning, et al., Harvey and Kimura et al. should be withdrawn.

In light of the foregoing remarks, it is respectfully submitted that the application is in condition for allowance, and an early favorable action in this regard is respectfully requested.

Respectfully submitted,

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